

Important Advances in Clinical Medicine

Epitomes of Progress—Otolaryngology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in otolaryngology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in otolaryngology which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Otolaryngology of the California Medical Association and the summaries were prepared under its direction.

Reprint requests to: Division of Scientific and Educational Activities,
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BSER Audiometry

BRAIN STEM EVOKED RESPONSE (BSER) audiometry is the term for the clinical use of averaged auditory evoked potentials recorded from the human scalp up to 10 msec after the auditory stimulus.

The early evoked response consists of several waves which have been numbered by Roman numerals. Wave V is the most prominent and is used for clinical study. The origin of wave V is thought to be in the region of the inferior colliculus. The latency of wave V decreases with an increase in the intensity of the stimulus and can be recorded to levels within 10 dB of threshold. The early evoked auditory response is not altered by level of attention or sedation.

Latency/sensation level functions have been established for persons whose hearing is within normal limits and are remarkably constant in different settings. A conductive hearing loss is shown by an increase in the latency of wave V at all sensation levels of the stimulus. A sensorineural hearing loss with recruitment is characterized by increased latency of wave V near threshold with normal latency at higher stimulus intensity levels.

For site of lesion studies, the latency between wave I and wave V is also measured. Wave I is thought to represent the surface recorded cochlear

nerve action potential. A brain stem disorder is characterized by an increase in neural conduction time; wave I occurs within the normal latency while wave V is delayed.

Clinically, BSER audiometry is being used to determine auditory thresholds for very young children or those who are difficult to test, as well as for patients with functional hearing loss. Brain stem lesions such as cerebellopontine angle tumor, multiple sclerosis or brain stem vascular and neoplastic lesions may be identified with the use of the I-V intrawave latency.

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REFERENCES

- Jewett D, Williston J: Auditory-evoked far fields averaged from the scalp of humans. *Brain* 94:681-696, 1971
Picton TW, Woods DL, Baribeau-Braun J, et al: Evoked potential audiometry. *J Otolaryngol* 6:90-119, 1977

Brain Stem Electric Response Audiometry

EARLY DIAGNOSIS of hearing impairment in children is extremely important. The sooner a loss is discovered and treatment begun, the better the outlook for rehabilitation.

Until recently there was no reliable method of measuring hearing in infants and young children.